

# npnews

ISSUE 2  
2019

A publication of Ngee Ann Polytechnic



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### Class Date

10 Feb 2020 – 14 May 2020

### Venue

NP Satellite Campus @WeWork  
(Beach Centre / Suntec)

### Class Schedule

**10 weeks evening classes** (Mon-Thu / 6.30pm to 10pm)

**4 weeks of self-paced capstone project preparation** (Consultation once / week)

**1 demo day** (Evening)

### About our Partner

**Algoritma:** A leading data science training academy in Jakarta. Algoritma is founded with the vision of democratizing data science skills and equipping every professional with a set of core skills across the various domains of data visualisation, regression, data modeling, machine learning, and statistical programming literacy.

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COVER PHOTO: SAM CHIN

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## features



The library's roving service robot can answer basic enquiries and make announcements.

# A CAMPUS FOR THE FUTURE

Developing a digitally-ready community for the future economy

TEXT: MELANIE WEE

Intuitive smart classrooms, robots and chatbots, and blockchain graduation certificates – these all form a part of Ngee Ann Polytechnic's (NP) Smart Campus plan, which aims to transform how students, alumni and staff learn, work and interact.

"Our future-ready campus is fundamentally about building a community of students, alumni and staff who are digitally-enabled, innovative, progressive and well-poised for the future economy," said NP Principal, Mr Clarence Ti.

Here's a look at how NP is digitalising processes and harnessing technology to optimise students' learning, foster efficient work practices and enhance the on-campus experience.

## YOUR LIBRARY VISIT, REDEFINED

Say hello to the latest upcoming library assistant on campus – a helpful library service robot that enhances the library experience for patrons.

Set to be launched at the end of this year, the roving robot can answer common queries, make announcements and lead users to selected library locations. The robot can also connect the user to back-office librarians through teleconferencing.

The project is a collaboration between the Library and NP's Robotics Research & Innovation Centre (Service Robots Cluster), led by Mr Li Yinbei. It integrates artificial intelligence-based speech interaction, autonomous navigation and cloud robotics, amongst other technologies.

"About 30 percent of over-the-counter activities revolve around frequently asked questions on library facilities, directions and loan policies, which can be readily answered through automated means. Besides aiding our library staff, we hope the robot will serve as an additional touchpoint to better engage our library patrons," said Mr Leslie Chiang, NP Library's Assistant Director of Technology & Services.

This is a first robot prototype for the Library. There are plans to explore how robots can help address other library-related issues such as noise control and item location.

## CLASSROOMS OF THE FUTURE

The ubiquitous classroom whiteboard has gotten an "upgrade" in some of NP's new learning spaces.

At the School of InfoComm Technology's (ICT) smart classrooms, students share ideas on wireless interactive canvasses, like the Surface Hub with multi-touch and multi-pen capabilities, and multiple wireless projections for easy capturing and broadcasting of lessons. In addition, the configurable spaces can be customised to facilitate collaborative learning.

From ICT, smart classrooms are being progressively rolled out to NP's other schools, starting with the School of Business & Accountancy and School of Interdisciplinary Studies. These classrooms will feature intelligent ambient controls which automate settings such as light intensity, temperature and shades that tap on daylight harvesting. Carbon dioxide levels can even be regulated through automated air valves.

Future plans for smart classrooms include tapping on facial recognition, artificial intelligence and data analytics to track student engagement levels through facial expressions and behavioural cues, allowing lecturers to adapt lesson content accordingly. Potential applications may also include detection of unauthorised classroom entry, with real-time security alerts.



Configurable learning spaces and wireless interactive canvasses are among the features of NP's smart classrooms.

### EVA, THE AI-POWERED VIRTUAL ASSISTANT

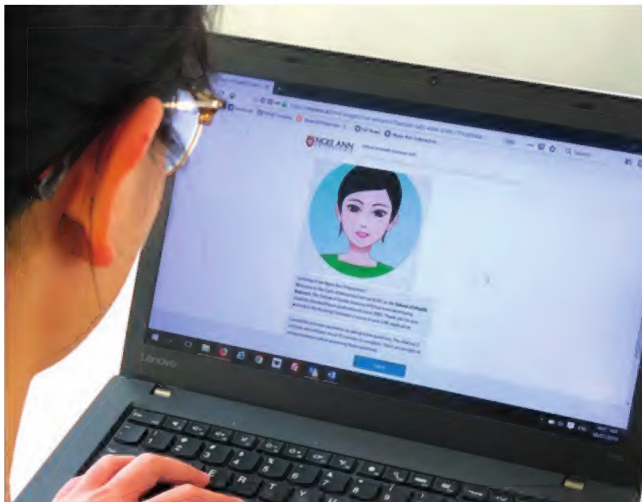
Students applying for the Early Admissions Exercise (EAE) at NP in July came "face-to-face" with a robotic virtual assistant that interacts with them and reviews their applications. EVA, the first-of-its-kind chatbot for admissions exercises at NP, leverages artificial intelligence and machine technology to enhance the entire application and shortlisting process.

Based on applicants' responses during their online chat with EVA, assessors at NP can better grasp their personalities and strengths. This allows them to engage shortlisted applicants more effectively during the next step of face-to-face interviews.

EVA was piloted at three academic schools – Business & Accountancy, Film & Media Studies and Humanities & Social Sciences – and will be rolled out to all academic schools by 2020. Prior to EVA, staff would review application write-ups manually, which took up to 4,700 man-hours across the three schools.

With EVA, application reviews take just two hours, thanks to its predictive engine capability which can read the write-ups.

Other virtual assistants currently "employed" by the polytechnic include AskNP, which answers queries on courses and admissions; AskLiBbie, which deals with library enquiries; and AskIT, an IT service portal for staff and students.



EVA, the AI chatbot, interacts with Early Admissions Exercise applicants to better understand their aptitudes and interests.

Eighteen participating institutions came together at NP to sign a Memorandum of Understanding for the launch of OpenCerts on 3 May.



### OPENCERTS: BLOCKCHAIN CERTIFICATES FOR EDUCATIONAL INSTITUTIONS

At this year's graduation ceremony, NP graduates received digital tamper-proof Blockchain certificates that can be easily verified by future employers.

Under OpenCerts, digital certificates will be issued to students receiving their 'N', 'O' and 'A' level, diploma and degree qualifications. The certificates will harness Blockchain technology for secure digital verification. This Smart Nation initiative was first piloted last year by NP and subsequently adopted nationwide through SkillsFuture Singapore.

Potential employers can automatically verify these certificates via the OpenCerts platform, simplifying their administrative processes. All learners – including those who have attained Singapore Workforce Skills Qualifications (WSQ) – will have their certificates stored in their Skills Passport, accessible via the My SkillsFuture Portal or mobile app.

"We are excited that our project has been a catalyst for the education sector as a whole to leverage this technology to improve work processes and make life easier for citizens," said NP Principal, Mr Clarence Ti.



Curious about how OpenCerts works?  
Scan this for a quick explainer video:



### COMING UP ON NP'S SMART CAMPUS

#### Autonomous Vehicles

Driverless vehicles are set to hit the roads within the NP campus next year. Under a partnership with local startup, Moovita, staff will get to participate in a trial to travel on autonomous vehicles providing shuttle services across the campus.

# A MEDICAL BREAKTHROUGH

Japan-Singapore research team develops technology and system for auto-detection of heart disease **TEXT: MELANIE WEE**

Patients with heart diseases may soon have their conditions detected quickly and remotely, thanks to a wearable ultrasound device system to be developed by a research team from Ngee Ann Polytechnic (NP), National Heart Centre Singapore (NHCS) and Japan's Kumamoto University (KU).

The device prototype incorporates wireless ultrasound and an Artificial Intelligence (AI)-assisted Automatic Heart Diagnosis System (AHDS). Wireless patches are applied on the patient to continuously capture ultrasound signals of the heart and blood vessels for extended periods of time. These signals are transmitted to an external reader, with the output processed by the AHDS.

Clinicians can thus receive results continuously to assess and treat patients, as the device instantaneously transmits cardiovascular signals. The device can be used for screening of heart conditions and monitoring of treatments, including a patient's heart condition during high-risk surgeries.

NP's Dr Rajendra Archarya led the polytechnic's team in developing the machine learning system to automatically diagnose heart conditions, while NHCS provided clinical inputs and KU's



**(Main photo)** A demonstration of the AI-assisted Automatic Heart Diagnosis System which can remotely detect heart disease. **(Inset)** The wireless patch that continuously captures ultrasound signals.

researchers developed the non-invasive remote ultrasound technology. The Memorandum of Understanding between the three parties was signed at NP on 20 September, and there are plans to deploy the prototype for clinical trials at a hospital in Singapore.

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## BOOSTING DEVELOPMENT PROGRAMMES FOR STUDENTS

Ngee Ann Polytechnic (NP) student Victoria Tan scored the opportunity of a lifetime to intern at a startup, DRVR in Bangkok, Thailand where she was actively involved in driving its development programme to become the region's leading fleet analytics platform.



The Global Entrepreneurial Internship Programme gave Victoria Tan the opportunity to intern for six months at DRVR, a startup in Bangkok.

She spent six months there as part of the Global Entrepreneurial Internship Programme (GEIP), which allows students with entrepreneurial interests to work in a startup overseas.

The GEIP is just one of the programmes made possible by annual funding from Ngee Ann Kongsi, alongside others such as the Overseas Innovation Challenge and Social Leadership Challenge which enable NP students to hone their skills, experience global cultures and give back to society. Thanks to Ngee Ann Kongsi's unwavering support, almost 3,000 students including Victoria have benefited from student aid grants, and local and overseas development programmes.

"I would not have been able to afford such an enriching experience and gain these networking opportunities, if not for the GEIP," said Victoria.

"Ngee Ann Kongsi's generous contributions allows us to invest in quality programmes that add value to our students' learning journey and broaden their horizons," said NP Principal, Mr Clarence Ti.

# NEW COURSES AT Ngee ANN POLYTECHNIC



Students are set to benefit from three new courses offered by Ngee Ann Polytechnic (NP), starting from April 2020.

The diplomas in Community Development, Design and Media Post-Production will nurture future-ready students, and equip them with multiple skillsets to give them a head start in today's new economy.

## COMMUNITY DEVELOPMENT

**Offered by the School of Humanities & Social Sciences**

Freshmen will learn about community needs and be introduced to psychology, sociology and the local social service sector through Community Kickstarter, one of the course's signature programmes.

In their second year, they will learn about managing social service organisations; and social work marketing, research and counselling. A Changemakers Bootcamp and Service-Learning projects provide more avenues for hands-on learning.

Final-year students will gain industry exposure through Social Innovation in Action, a practicum with key social service and non-profit partners; or get to start their own social enterprise. They will also go on local or overseas internships to hone their social entrepreneurship skills.

### Course features:



Prepares graduates for meaningful careers in the social service and social enterprise sectors, as well as both non-profit and for-profit organisations



Broad-based curriculum integrates management, psychology and entrepreneurship



Opportunities to develop and propose innovative solutions for social causes through Overseas Community Mapping Trips

## DESIGN

**Offered by the School of Design & Environment**

Signature programmes such as Design Playbook let students build strong design fundamentals in their first year, before being exposed to real-world environments and deepening their skillsets through Design Immersion in their second year. Design Beyond will see final-year students undergo local or overseas internships and work with organisations to co-create design solutions.

### Course features:



Grooms designers for careers across design and non-design sectors



Two second-year specialisations to choose from – Architecture or Product Innovation



Covers design thinking and user experience/interface (UX/UI) skills for the future economy



Spans multiple disciplines, from arts to business and engineering



Studio-based learning approach lets students build their own portfolios

## MEDIA POST-PRODUCTION

**Offered by the School of Film & Media Studies**

First-year students will learn post-production fundamentals, storytelling techniques and design principles, and start developing their portfolio of motion graphic videos. In their second year, they will master the craft behind staging live events, through audio-visual set-up, projection technologies, stage lighting and effects, and hone their skills in creating 3D motion graphics. Final-year students will learn to manage a media business, and undertake an internship and capstone project.

### Course features:



The only polytechnic diploma on post-production skills for media, live events and entertainment



Students acquire creative and technical expertise, while staying updated on new technology and industry trends



Internship opportunities at mega live shows and post-production houses



Encompasses multi-disciplinary skillsets which are in demand in the media post-production, visual graphics and production technical services industries

# THE MASTERS COLLECTIVE

Step into the world of the experts and unlock their trade secrets

TEXT: ANDREA CHUA & HAFEEZ SIM



Marcus Tan, co-founder of online marketplace, Carousell, sharing his future plans at the launch of the Masters Collective in August.

Fans of Love Bonito's Rachel Lim, Carousell's co-founder Marcus Tan, as well as social media influencers, Tan Jun Jie and Bong Qiu Qiu, were among the over 100 guests treated to exclusive fireside chats with local entrepreneurs at the launch of the Masters Collective on 6 August at the Asian Civilisations Museum.

The first-of-its-kind made-in-Singapore online video docu-series, the Masters Collective by Ngee Ann Polytechnic (NP) works with industry icons and experts to film and curate courses featuring their experiences and insights into mastering their craft.

Presented in bite-sized modules, the lessons cover practical skills for aspiring entrepreneurs. Each series takes about seven hours to complete and includes reading material and video content.

"The Masters Collective allows participants to not only discover how these entrepreneurs got started, but also get a glimpse of their thoughts," said Mr Patrice Choong, Director of The Sandbox, NP's office for innovation and entrepreneurship.

Two of the series, "How to be a Social Media Influencer" and "Launching a Fashion and Lifestyle Business", were released in September, with the other two series to be released later this year.

**Price: S\$90/course (excluding GST). Singapore Citizens and Permanent Residents can tap on their Skillsfuture Credit and enjoy 70 per cent course subsidies.**

## MEET THE EXPERTS @THE MASTERS COLLECTIVE



### Launching a fashion and lifestyle business

Rachel Lim, founder of Love, Bonito, shares insights on starting a fashion and lifestyle business.



### Building a tech platform that serves millions of users

Marcus Tan, co-founder of Carousell, talks about the basics of starting a tech platform and the secret to attracting customers and investors.



### Get started on being an entertainer entrepreneur

Acclaimed director and actor, Alaric Lim, shares tips on breaking into Singapore's television and film industry, and insights on producing and directing.



### How to be a social media influencer

Well-known social media influencers Bong Qiu Qiu, Malaque Mahdaly and The MeatMen share how they became influencers, and tips on maintaining a social media presence.

Scan for more information:





Ng Kai Qing (right) and her mentor from Samsui Kitchen, Ms Chia Sieh Yan.

# Learning By SERVING

How Service-Learning is nurturing students to apply their skills  
and benefit communities **TEXT: CHAN YEE CHUN & MELANIE WEE**

**O**ne inspiring Youth Expedition trip to Cambodia was all it took to kick-start Ernest Wong's Service-Learning journey. There, he learnt about community mapping, identified the needs of villagers and worked alongside them to develop a recycling business with slum dwellers who scavenge for a living.

"The Cambodian people were initially resistant to the collaboration, but I saw how they positively transformed as the business took off. This motivated me to pursue service work for the community," shared the Class of 2017 Business & Social Enterprise graduate.

Ernest was among the pioneer batch of students to experience Service-Learning when Ngee Ann Polytechnic (NP) launched it as a signature pedagogy in 2016, a first among local polytechnics. He now runs Movement of Inclusivity, a non-profit organisation that aims to nurture a spirit of inclusivity in Singapore.

## INCORPORATING SERVICE-LEARNING INTO OUR CURRICULUM

Service-Learning, or S-L, encourages purposeful learning

and active citizenry by leveraging the skills and knowledge of students' disciplines to meet identified community needs. It also hopes to instil in students empathy, values and a sense of civic responsibility, and inspire them to serve beyond themselves.

Since its launch, S-L has been integrated into NP's core curriculum, with more than 60 modules utilising it to deepen students' learning.

S-L has also been infused into students' internship experiences, with this year's launch of civic internships, which place students in socially-oriented workplaces (see box story overleaf). In addition, NP organises masterclasses, training workshops and conferences to share S-L expertise among the public, educational, business and social sectors.

"We launched S-L as it aligns with our graduate outcomes – to develop students to be passionate learners, have a big heart for the community, and be ready for a global workplace. Beyond just a pedagogy, S-L has paved the way for us to build a better society and cultivate the heart of a city through the nurturing of its youth," said NP Principal, Mr Clarence Ti.

"We launched S-L as it aligns with our graduate outcomes – to develop students to be passionate learners, have a big heart for the community, and be ready for a global workplace. Beyond just a pedagogy, S-L has paved the way for us to build a better society and cultivate the heart of a city through the nurturing of its youth." – NP Principal, Mr Clarence Ti.

## INTERN WITH A PURPOSE

Putting Service-Learning into practice through civic internships

Accountancy student Ng Kai Qing was among the more than 600 students in the pilot launch of semester-long civic internships that focus on meeting community needs. She was attached to food catering social enterprise, Samsui Kitchen. Other industry partners that offer civic internships include Youth Corps Singapore and the Singapore Cord Blood Bank.

"This social enterprise resonated with my idea of giving back to the community, as they run a business while hiring prison inmates to prepare healthy meals for nursing home residents," said Kai Qing, who handled the accounts of both Samsui Kitchen and its parent company, The Soup Restaurant. "I hope to discover what I can do for our community and explore career options through this internship," she added. Kai Qing's social advocacy interest was sparked by a



Accountancy student, Ng Kai Qing put her skills to good use during her internship, handling the accounts of social enterprise, Samsui Kitchen.

Service-Learning module where she helped foreign domestic workers with their budgeting issues. She also helmed the "NP Goes Eco" campaign, where over 1,000 NP staff and students pledged to reduce plastic use.

## A SHELTER FOR GOOD

A refurbished taxi stand for Pulau Ubin, thanks to Service-Learning project

As part of their Design Studio module, which incorporates the Service-Learning pedagogy, second-year Sustainable Urban Design & Engineering students had to propose a solution for a community's architectural needs and challenges.

"Ubin has an element of adventure – the students needed to literally go



Students consulting Ubin's residents on refurbishment plans for the island's taxi stand.

## MILESTONES

2016

**APRIL:** Service-Learning (S-L) launches as NP's signature pedagogy, the first by a local polytechnic.

**DECEMBER:** NP obtained its first MOE Tertiary Education Research Fund (TERF) grant of \$70,000 to study S-L's impact on polytechnic students, the first large-scale systematic evaluation of S-L in local institutions of higher education.

2017

**MARCH:** First external consultant and leading academic in S-L, Professor Robert Bringle (Indiana University, Purdue University Indianapolis, USA), visits NP to lend his expertise on curriculum development, pedagogy, evaluation and research.

**OCTOBER:** First S-L training conducted by in-house trainers for NP staff, paving the way for NP to offer S-L related courses to other educational institutions.

the distance to understand the issues residents face," said their lecturer, Mr Raja Mohammad Fairuz.

"Through our chats with the Ubin residents, we realised that the design of the island's taxi stand made it a poor shelter in stormy weather, and its plain, faded signboard was often missed by customers," said project member, Charles Tew. "In our proposal to refurbish the taxi stand, we wanted to keep its rustic charm. So we suggested replacing the leaky roof with galvanised zinc roof panels and installing retractable blinds to keep out the rain. We also proposed a new signage and a queue board to reflect the fare charges."

Students consulted with Ubin's taxi drivers throughout the design process. Their final proposal was approved by NParks and the Ministry of Social and Family Development.

There are plans for students to participate in future projects on Ubin, such as refurbishing an old kampong house into a community centre for residents.

## KEY DATA\* ON SERVICE-LEARNING



\*As at December 2019

## IMPACT OF SERVICE-LEARNING ON STUDENTS\*\*



2018

### JANUARY:

- Signing of Memorandum of Understanding (MOU) with World Vision Singapore to collaborate on youth development, social action projects, internships and international S-L efforts
- Launch of S-L Online Network to strengthen students' civic capabilities

### MARCH:

Second external consultant, Professor William Davies (Fudan University), visits NP to advise on the interpretation of S-L into Science, Technology, Engineering and Mathematics (STEM) courses

### MAY-JUNE: MOU signed with North

West Community Development Council, enabling NP to tap into SGD1,600 per year for S-L and community service projects till May 2021

### NOVEMBER: S-L research team

wins ETAS Conference Theme Research Paper Prize conferred by the Education Research Association of Singapore, the only team to win in the category

2019

**JULY:** First S-L project involving adult learners from the Continuing Education & Training (CET) Academy's Specialist Diploma in Community Geometry at NP

**SEPTEMBER:** Launch of Civic Internships, which place students with socially-oriented nonprofit and non-profit organisations

**NOVEMBER:** NP receives the Community Partnership Excellence Award at the Peoples Association Community Spirit Awards 2019 in recognition of its S-L efforts

# CELEBRATING that EXTRA MILE

Ngee Ann's Awards Night pays tribute to outstanding students  
who go the extra mile to reach their goals **TEXT: CHAN YEE CHUN**

They had big dreams and persevered in pursuing them. And in recognition of their achievements, 434 Ngee Ann Polytechnic (NP) students received accolades at NP's Awards Night held on 26 July. The annual event celebrates contributions in non-academic arenas such as community service, sports, technology, arts, environment, innovation and enterprise.



Undeterred by her disability, Sandy Kee is a committee member of NP's aerobics CCA, and an accomplished photographer, ballet dancer and swimmer.

## **SANDY KEE**

### **NP Character Award**

Despite being diagnosed with profound hearing loss as a child, Sandy Kee has never let her speech and hearing impairment limit her. Already an accomplished ballet dancer and swimmer, the final-year Information Technology student took up aerobics as a CCA at NP, and served on its executive committee, handling administration and communication.

Although Sandy struggled to keep up with classes when she first entered NP, she found new ways to cope. She "talked" with friends on paper, through writing and illustrating, and they helped her to interpret the lessons. The top graduate from the Institute of Technical Education's Infocomm Technology course, Sandy returned the favour by helping her peers to understand abstract concepts. "I saw that it was my turn to help them, and I'm glad that I was able to do so," she said.

Sandy is also an avid photographer. In spite of her hearing impairment, Sandy is unafraid of approaching strangers if she spots the potential for a great shot. "Even though I can't express myself perfectly, I speak up to direct them to achieve the best pose," she said. "Sometimes I even demonstrate it."

In 2017, Sandy received the Singapore Association for the Deaf's Outstanding Deaf Students Award and the National Youth Achievement Award (NYAA) Gold Award from President Halimah Yacob.

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*The NP Character Award recognises individual students/teams who exemplify outstanding character for the benefit of others, and demonstrate remarkable resilience and strength in facing adversities and challenges.*

## TAN JIANG HOE

### Outstanding Enterprise (Individual) Award

Budding fashion entrepreneur, Tan Jiang Hoe has come a long way since his days as a young village boy from Malaysia, and he has pop icon, Sam Smith, to thank for his global success.

Back then, Jiang Hoe had dreamed of becoming a fashion creative director. Determined to get a head start, he set up his own t-shirt printing company, even though he had no capital and was studying for his 'N' and 'O' levels at that time. He persuaded suppliers to provide him with credit terms and his business turned in a profit within three months.

Jiang Hoe then scaled up and started ÜNIK Apparel in 2018, when he was a second-year Product Design & Innovation student in NP. He positioned his business as a streetwear brand that supports youths by translating their stories into graphic art on curated clothing pieces. He got his big break when he met Sam Smith in Singapore after waiting for an hour following his concert. The pop singer was won over by Jiang Hoe's vision for ÜNIK and posted an Instagram story featuring one of its shirt designs.

"After Sam Smith's post, the shirt sold out internationally in 27 cities, including London, New York and Shanghai," said Jiang Hoe, who has also garnered the support of Higher Brothers, a Chinese hip-hop group to don his designs. Last year, he even flew to Australia to attend Melbourne Fashion Week.



Tan Jiang Hoe's ÜNIK apparels sold out in cities worldwide, following Instagram posts from artistes like Sam Smith and Higher Brothers.

"In future, I hope that ÜNIK can collaborate with designers to illustrate the stories of youths across the globe, and inspire them on their journey," said Jiang Hoe.

*The Outstanding Enterprise Award is awarded to individual students/teams who demonstrate leadership, tenacity, resourcefulness and passion in creating a resilient business model which brings clear economic value to society.*



(From left): Ng Jun Long, Poh Huan Rong, Gracia Foo and Shawn Lim conceptualised Swoop, a eco-friendly, recyclable bag programme for subscribers.

## SWOOP

### Outstanding Enterprise (Team) Award

They wanted to work on a meaningful final-year project and conceptualised the idea of a recyclable bag subscription for supermarkets. And thus, Swoop was born.

The brainchild of Class of 2019 Business & Social Enterprise graduates – Ng Jun Long, Gracia Foo, Poh Huan Rong and Shawn Lim – Swoop provides subscribers with an eco-friendly, recyclable bag whenever they shop. Partnering with U-Stars supermarket, the team ran a six-week trial, working on shifts to persuade shoppers to subscribe to their programme.

Swoop faced its biggest setback when the supermarket needed its booth space for Chinese New Year promotions. Faced with potential eviction, it was pure luck that Gracia chanced upon Dr Vivian Balakrishnan, Minister for Foreign Affairs on board the MRT train. After a moment's hesitation, she approached him to explain Swoop's dilemma. Dr Balakrishnan kindly directed her to someone who helped the team to secure an alternative space.

While Swoop is on hold as the team has graduated from NP and moved on to enter National Service or university, they are optimistic about future prospects.

"Swoop turned operationally profitable within a month. It's encouraging that Singaporeans are willing to support an eco-friendly lifestyle," said Huan Rong.

# A HEAD START FOR YOUNG ENTREPRENEURS

How the Ngee Ann Polytechnic Incubator is helping startups to get up and running

TEXT: MAEVE WONG

He was seeking business partners for his expanding startup and turned to the Ngee Ann Polytechnic (NP) Incubator for help. That was how Logan Tan, founder of online industrial supplies marketplace, Eezee, met fellow technopreneurs, Jasper Yap and Terrence Goh, and a strong partnership was cemented.

Eezee is just one of the young startups that the NP Incubator has supported. An initiative by The Sandbox, NP's innovation and entrepreneurship office, it gives entrepreneurial NP students and alumni a head start in their business pursuits through networking sessions with potential investors, mentorship programmes and workshops. Startups can also tap on the office spaces, secretariat support and website designers that the NP Incubator offers.

In addition, those looking to commercialise their businesses can receive funding – of up to \$10,000 through the Incubator Grant – to turn their ideas into reality.

The NP Incubator has housed more than 30 startups since its launch in June 2013. It hopes to continue nurturing a culture of entrepreneurship through programmes such as the Startup Talent Factory, which gives polytechnic graduates an opportunity to work at a startup, while helping to fill manpower gaps in these companies, many of which were seeded at the NP Incubator.

"The NP Incubator gave us countless opportunities to learn, grow and connect with others and we are very grateful," said Logan.

## EEZEE

**Logan Tan** (Class of 2007 Business Studies)

**Jasper Yap** (Class of 2017 Aerospace Technology)

**Terrence Goh** (Class of 2017 Multimedia & Animation)

Their startup, Eezee, may be just two years old, but it has already received an undisclosed amount of seed funding from Insignia Ventures Partners for overseas expansion. The one-stop online superstore for industrial supplies is the brainchild of NP alumnus Logan Tan, who leads the business along with partners and fellow NP alumni, Jasper Yap and Terrence Goh.

(From left): Jasper Yap, Logan Tan and Terrence Goh run Eezee, a one-stop online store for industrial supplies.



Scan for more  
information on NP  
Incubator initiatives



### What is the inspiration behind Eezee?

I (Logan) started Eezee to help SMEs gain an online presence, while easing the procurement process for businesses. Eezee expanded rapidly and I decided to look for business partners. That's when I approached the NP Incubator, and was connected with Jasper and Terrence.

They had been working at their own startup, but over time we decided to join forces to take Eezee further.

### As NP alumni, how did you get help in starting the business?

The NP Incubator helped greatly in establishing our business as that was where we met and connected. It's like a support system of fellow entrepreneurs who understand what we're going through. We've also had opportunities to attend networking sessions to meet mentors and potential investors.

### Tell us more about your future plans.

We want to help our suppliers export regionally to Malaysia, Indonesia and Taiwan. In the long run, we hope to contribute to the GDP in the export markets of Singapore. Currently, we are working with Enterprise Singapore on digitalisation for over 1,000 SME suppliers in the wholesale trade industry.

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## GENERATION CONNECT

**Cassandra Seah** (Class of 2014 Business Studies)

She designs award-winning multi-sensorial games for people with disabilities, and counts Ng Teng Fong General Hospital and Thye Hua Kwan Moral Charities among her clients. Meet the founder of Generation Connect, and winner of International Design Excellence awards, Cassandra Seah, who is proof that giving back to society can indeed take you far.

### What inspired you to start Generation Connect?

I was deeply affected when my grandfather, whom I am very close to, was diagnosed with dementia. Witnessing his struggles inspired me to pursue product design and develop interactive products to help dementia patients get back on track.

### After graduating from NP, you took a degree in fine arts and are now pursuing a PhD in Engineering Design at London's Imperial College. How do you balance your work and school?

My PhD is centred on product design, which can be considered an extension of my work at Generation Connect. This makes it easier to integrate the two, as it helps me with gathering the data I need.

### What do you find most rewarding about running this business?

I've always wanted to give back to the community, so seeing how



Cassandra Seah with one of Generation Connect's multi-generational interactive games.

"I've always wanted to give back to the community, so seeing how my products can change the lives of patients really warms my heart and motivates me to press on." – Cassandra Seah, Class of 2014

Business Studies student

my products can change the lives of patients really warms my heart and motivates me to press on.

### What are your future plans?

I hope to expand globally so that my products can reach as many vulnerable groups as possible. My studies in London will give me exposure to its regional clinics for product testing, so I can continue designing effective aids for the elderly and those with disabilities.

# Empowering Youths through the FUTURE CITY PROGRAMME



The Internet of Things (IoT), artificial intelligence and autonomous vehicles are technologies that are shaping cities of the future. And thanks to the first-of-its-kind Future City Programme, youths will be well-equipped to play a vital part in future city projects and solutions.

The launch of the pan-polytechnic initiative – led by Ngee Ann Polytechnic (NP) – was announced by Education Minister Ong Ye Kung in April at the Education & Career Guidance Symposium, jointly organised by the Ministry of Education and NP.

The programme brings together academia, industry and government to groom the next generation of talent for future city projects. Students can witness how agencies and companies deal with real-world urban challenges, and contribute their ideas and skills in areas such as sustainable urban design, data analytics and IoT.

Since its launch, over 800 students have benefited from campus mentorship talks and learning journeys with partner organisations including Gardens by the Bay, JTC Corporation, Urban Redevelopment Authority and the National Environment Agency.

“On our learning journeys, we saw how different technologies are integrated and implemented. For example, JTC’s J-Ops Command Centre had a video analytics system that detects movement in videos. This allows an automated system to identify high frequency areas, trespassers and even illegally-parked cars,” said Engineering Science student, Joshua Wee.

Commenting on the programme, NP’s Principal Mr Clarence Ti said, “Through these interactions, we hope that young people will be inspired to build their careers around developing innovative solutions for Singapore in the future and make a difference in the lives of fellow Singaporeans.”

## Future City Learning Journeys

Students learn about real-world applications and solutions, in-demand skills and exciting careers from engineers and professionals building future cities



FUTUREENERGY



FUTUREBUILDINGS



FUTURETRANSPORT



FUTURESACES



FUTUREHEALTH



FUTUREENABLERS

# DATA CERTIFICATION PATHWAY

## Grooms Learners for Data Roles

Priming more data scientists and analysts for the Smart Nation economy – that is the aim of the Data Certification Pathway, jointly designed by OCBC Bank and Ngee Ann Polytechnic (NP).

All Singaporeans will have access to the progressive set of 12 modules on the My SkillsFuture portal by the end of 2019. Conducted by lecturers from NP's School of InfoComm Technology and industry practitioners, the modules will deliver practical skills for data roles through classroom and online learning, project work, assignments and assessments.

Learners will take four foundational modules – including Python for programming, data essentials and data storytelling – before specialising in the Data Scientist or Data Analyst track, which comprises four modules each. They will receive an official certification from NP upon completing either track, which will take between two and three years. Proficient learners can also choose to apply for individual modules.

OCBC Bank hopes to add 200 more data scientists and analysts to its staff through the pathway.

"The structured learning pathway we have designed together with NP will groom future data scientists and analysts for our Smart Nation so that Singapore remains future-ready," said OCBC Bank's Head of Group Human Resources, Mr Jason Ho.



(From left): Mr Clarence Ti, NP Principal; Mr Jason Ho, Head of Group Human Resources, OCBC Bank; and Dr Michael Fung, Deputy Chief Executive (Industry), Chief Human Resource Officer & Chief Data Officer, SkillsFuture Singapore; at the launch of the Data Certification Pathway in July.

## Stronger Collaborations with VIETNAMESE STARTUPS

With the expansion of the Global Innovation Alliance to Ho Chi Minh City, more students will undergo internships there under the Global Entrepreneurial Internship Programme.



More Ngee Ann Polytechnic (NP) students are set to be a part of the emerging innovation scene in Ho Chi Minh City, Vietnam.

About 100 students will undergo internships there over the next two years under NP's Global Entrepreneurial Internship Programme, which places students in startups around the world. They will be exposed to its vibrant innovation ecosystem and business scene, and gain valuable hands-on entrepreneurship experience.

This was among the initiatives unveiled by Enterprise Singapore in July, as it announced the expansion of the Global Innovation Alliance (GIA). The GIA aims to strengthen local connections with major innovation hubs worldwide. As a part of the GIA, NP signed six Memorandums of Understanding with Vietnamese companies and startups, including Lazada Vietnam and Indovina Bank, Vietnam's first joint venture bank with partners from Vietnam and Taiwan.

Under the expansion plan, NP will also set up its first GIA office in Ho Chi Minh City to support these new entrepreneurship initiatives.

# GETTING THE JOB DONE

Ngee Ann Polytechnic students on their internships gain practical, one-of-a-kind learning experiences **TEXT: CHAN YEE CHUN & MELANIE WEE**

Yong Kai En (centre) hiking with friends at Alum Rock Park, California's oldest municipal park.



## YONG KAI EN

**Course:** Financial Informatics

**Intern at:** Strikedeck, a Silicon Valley-based startup, under NP's Global Entrepreneurial Internship Programme (GEIP)\*

**A job well done:** I was a software engineer at Strikedeck, a customer success solutions startup. I spearheaded a project there on quality assurance automation, developing automated scripts to run on a cloud server. I also worked on quality assurance matters, validating our clients' technical issues and ensuring they were resolved as quickly as possible. After gaining hands-on experience, I was given more responsibilities, as my boss trusted me to deliver high-quality work.

**Growing with startups:** Shortly after completing my internship, I learnt that Strikedeck had been acquired by Medallia, a multinational customer experience management company. Knowing that I had contributed to this startup's success gave me a great sense of achievement.

**Business inspiration:** During my internship, I was collaborating with a coursemate who was undergoing a GEIP internship in Indonesia. We developed a dedicated platform to reduce



Yong Kai En (right) with colleagues at Strikedeck's Silicon Valley office.

fraudulent activities in Singapore's e-commerce market, by verifying every user. Working across different timezones was challenging, but our startup internships gave us the important foundation we needed to scale our business.

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*\*The Global Entrepreneurial Internship Programme provides students with internship opportunities at startups across the globe.*



## LIW XIN CI

**Course:** Electronic & Computer Engineering  
**Intern at:** ST Engineering (Electronics Sector) under the Future City Programme\*

**On a drone alert:** Over my four-month internship, I worked on projects to keep our customers' sites secure by detecting unauthorised drones, and jamming their signals to stop them from flying.

**Data cruncher:** My job involved collecting data from different drone signals and using machine learning to develop a programme to counter unauthorised drones. To help with data curation, I had to pick up the Python programming language from scratch. It was challenging, but I succeeded in the end.

**The secret-keeper:** Because our drones operated in high-security areas, some of my projects were confidential in nature. At first, I accompanied my colleagues on their site visits, but in due course, I handled them on my own. Knowing the company entrusted me to work independently was satisfying. Eventually, I was even able to guide some of my older colleagues on what needed to be done.

**Wiser now:** This internship gave me exposure to working life, and taught me communication, networking, time management and problem-solving – skillsets that can't be picked up in a classroom. My deeper understanding of drone technology will also give me a head start in contributing to future city projects when I graduate.

*\*The Future City Programme is a pan-polytechnic initiative to groom the next generation of talent for future city projects through industry internships, learning journeys and mentorship talks.*



(Top) Liw Xin Ci (centre) working on-location with colleagues at the Civic District.



(Left) A drone used by Liw Xin Ci for data collection.

"This internship gave me exposure to working life, and taught me communication, networking, time management and problem-solving – skillsets that can't be picked up in a classroom."

– Electronic & Computer Engineering student,  
 Liw Xin Ci



# MAKING THEIR MARK ON THE WORLD'S STAGE

Ngee Ann duo clinch the bronze medal in the Cybersecurity category at WorldSkills Kazan

TEXT: MELANIE WEE

Ravern Koh first became interested in cybersecurity as a secondary school student, when he learnt about the vulnerabilities of the mobile apps he had developed. That spurred the final-year Information Security & Forensics (ISF) student to expand his technology know-how – knowledge which he put to good use at the recent WorldSkills competition for youths in Kazan, Russia.

Representing Singapore in the field of Cybersecurity – a new skill area debuting in Kazan – Ravern and his teammate, Class of 2019 ISF graduate Devesh Logendran, won a bronze medal, proving their mettle amongst teams from countries such as the United States, China, Japan and Russia.

The duo had to set up their own secure servers and defend

them against other teams, while also detecting and breaching loopholes in their opponents' setups. That was when their practice sessions in Singapore paid off. "During the competition, we complemented each other's strengths," said Ravern. "Devesh is more attack-minded, while I'm stronger in defense."

"We thought our chances of winning were slim, so we were happy and surprised to clinch the bronze. It was exciting to share the podium with China and Russia, who are powerhouses in the cybersecurity field," added Devesh.

Another Ngee Ann team did well, with Class of 2019 Mechanical Engineering graduates, Arthur Liew and Wong Shi Jie, winning the Medallion for Excellence in the Mechatronics category.

## SPECIAL MENTIONS

- Ngee Ann Polytechnic received the Progressive Employer Award at the 5th Enabling Employers Awards held in July. Administered by SG Enable, an agency dedicated to enabling persons with disabilities, the awards pay tribute to extraordinary employers who have demonstrated commitment in facilitating inclusive employment.
- Three Class of 2019 graduates from Ngee Ann's School of Life Sciences & Chemical Technology – Darren Leong, Shawn Low and Snow Lin – were accepted into the National University of Singapore's Yong Loo Lin School of Medicine this year. Darren and Shawn are Biomedical Science graduates, while Snow graduated from the Molecular Biotechnology course.
- A student-alumnus team from the Engineering Science course clinched the Lee Hsien Loong Interactive Digital Smart Nation Award for their rat-culling device. The 24/7 Rat Killer developed by Tan Zhi Qi (Class of 2019) and Aron Lee (Year 3) can be attached to manhole covers along sewer lines to track underground rat movements and release rodenticides to prevent infestations.

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# HONOURING OUR UNSUNG HEROES



Over 700 guests were treated to films by young filmmakers – including those from Ngee Ann Polytechnic (NP) – at the Honour Film Screening on 1 November at Capitol Theatre. The ninth run of the event featured five films celebrating the extraordinary women of Singapore.

NP's School of Film & Media Studies is the founding and lead national partner of "The Honour Film Initiative", a partnership with non-profit organisation, Honour (Singapore) to promote the values of honour and honouring in society.



NP News is a production of Ngee Ann Polytechnic

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